DITIE REC'T PETIPTO JUN 2 0 2002

### IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re United State	es Patent Application of:	)	
Applicant:	Nuesch, et al.	) Docket No.:	4121-136
Application No.:	10/069,056	) Examiner:	Not yet assigned.
Date Filed:	February 11, 2002	) Group Art Unit:	Not yet assigned.
Title:	PARVOVIRUS NS 1 VARIANTS	) ) )	23448

#### **EXPRESS MAIL CERTIFICATE**

It hereby is certified by the person identified below that the attached documents are being mailed to the Commissioner of Patents on the date specified, in an envelope addressed to the Commissioner of Patents, Box PCT, Washington, D.C. 20231, and Express Mailed under the provisions of 37CFR 1.10.

Katturi Hollan C

June 20, 2002 Date of Mailing

EL544952114US
Express Mail Label Number

### STATEMENT OF IDENTITY UNDER 27 C.F.R. §1.821 (f)

Commissioner for Patents Box PCT Washington, D.C. 20231

Sir:

I hereby state that I have prepared the paper copy of the document titled "SEQUENCE LISTING.st25.txt" and recorded such document on computer readable form on June 14, 2002, and that information recorded in computer readable form is identical to that on the paper copy of sequence listing submitted.

Respectfully submitted,

Marianne Fuierer Reg. No. 39,983

Attorney for Applicants

INTELLECTUAL PROPERTY/ TECHNOLOGY LAW P.O. Box 14329 Research Triangle Park, NC 27709 Telephone: (919) 419-9350 Fax: (919) 419-9354 Attorney Ref: 4121-136

# SEQUENCE LISTING

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Ala Glu Asp Asn Glu Trp Val Thr Leu Leu Thr Tyr Lys His Lys Gln
180 185 190 Thr Lys Lys Asp Tyr Thr Lys Cys Val Leu Phe Gly Asn Met Ile Ala 195 200 205 Tyr Tyr Phe Leu Thr Lys Lys Lys Ile Ser Thr Ser Pro Pro Arg Asp 210Gly Gly Tyr Phe Leu Ser Ser Asp Ser Gly Trp Lys Thr Asn Phe Leu 225 230 235 Lys Glu Gly Glu Arg His Leu Val Ser Lys Leu Tyr Thr Asp Asp Met 245 250 250 Arg Pro Glu Thr Val Glu Thr Thr Val Thr Thr Ala Gln Glu Thr Lys 260 270 Arg Gly Arg Ile Gln Thr Lys Lys Glu Val Ser Ile Lys Thr Thr Leu 285 Lys Glu Leu Val His Lys Arg Val Thr Ser Pro Glu Asp Trp Met Met 290 300 Met Gln Pro Asp Ser Tyr Ile Glu Met Met Ala Gln Pro Gly Gly Glu 305 310 320 Asn Leu Leu Lys Asn Thr Leu Glu Ile Cys Thr Leu Thr Leu Ala Arg Thr Lys Thr Ala Phe Asp Leu Ile Leu Glu Lys Ala Glu Thr Ser Lys 340 345 350Leu Thr Asn Phe Ser Leu Pro Asp Thr Arg Ala Cys Arg Ile Phe Ala 355 360 365 Phe His Gly Trp Asn Tyr Val Lys Val Cys His Ala Ile Cys Cys Val 370 380 Leu Asn Arg Gln Gly Gly Lys Arg Asn Thr Val Leu Phe His Gly Pro 385 400 Ala Ser Thr Gly Lys Ser Ile Ile Ala Gln Ala Ile Ala Gln Ala Val 405 410 415 Gly Asn Val Gly Cys Tyr Asn Ala Ala Asn Val Asn Phe Pro^Phe Asn 420 425 430

Asp Cys Thr Asn Lys Asn Leu Ile Trp Val Glu Glu Ala Gly Asn Phe 435 440 445

Arg Ile Asp Gln Lys Gly Lys Gly Ser Lys Gln Ile Glu Pro Thr Pro 465 470 475 480

Val Ile Met Thr Thr Asn Glu Asn Ile Thr Val Val Arg Ile Gly Cys 485 490 495

Glu Glu Arg Pro Glu His Thr Gln Pro Ile Arg Asp Arg Met Leu Asn  $500 \hspace{1.5cm} 505 \hspace{1.5cm} 510$ 

Ile His Leu Thr His His Leu Pro Gly Asp Phe Gly Leu Val Asp Lys 515 520 525

Asn Glu Trp Pro Met Ile Cys Ala Trp Leu Val Lys Asn Gly Tyr Gln 530 540

Ser Thr Met Ala Ser Tyr Cys Ala Lys Trp Gly Lys Val Pro Asp Trp 545 550 555 560

Ser Glu Asn Trp Ala Glu Pro Lys Val Pro Thr Pro Ile Asn Leu Leu 565 570 575

Gly Ser Ala Arg Ser Pro Phe Thr Thr Pro Lys Ser Thr Pro Leu Ser 585 590

Gln Asn Tyr Ala Leu Thr Pro Leu Ala Ser Asp Leu Glu Asp Leu Ala 595 600 605

Leu Glu Pro Trp Ser Thr Pro Asn Thr Pro Val Ala Gly Thr Ala Glu 610 620

Thr Gln Asn Thr Gly Glu Ala Gly Ser Lys Ala Cys Gln Asp Gly Gln 625 630 635

Leu Ser Pro Thr Trp Ser Glu Ile Glu Glu Asp Leu Arg Ala Cys Phe  $645 \hspace{0.5cm} 650 \hspace{0.5cm} 655$ 

Gly Ala Glu Pro Leu Lys Lys Asp Phe Ser Glu Pro Leu Asn Leu Asp 660 665 670

<210> 11

<211> 60

<212> DNA

<213> Part of Parvovirus NS1 Variant

<400> 11

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<210> 12 <211> 2019 <212> DNA

<213> Parvovirus NSI Variant

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ggcactgcag	aaacccagaa	cactggggaa	gctggttcca	aagcctgcca	agatggtcaa	1920
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<210> 13

<211> 20

<212> PRT

<213> Part of Parvovirus NS1 Variant

<400> 13

Ile Cys Cys Val Leu Asn Arg Gln Gly Gly Lys Arg Asn Ala Val Leu  $1 \hspace{1cm} 15$ 

Phe His Gly Pro

<210> 14

<211> 672

<212> PRT

<213> Parvovirus NS1 Variant

<400> 14

Met Ala Gly Asn Ala Tyr Ser Asp Glu Val Leu Gly Ala Thr Asn Trp 1 10 15

Leu Lys Glu Lys Ser Asn Gln Glu Val Phe Ser Phe Val Phe Lys Asn 20 25 30

Lys Glu Leu Gln Glu Asp Glu Leu Lys Ser Leu Gln Arg Gly Ala Glu 50 60

Thr Thr Trp Asp Gln Ser Glu Asp Met Glu Trp Glu Thr Thr Val Asp 65 70 75 80

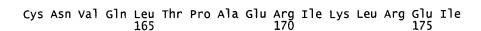
Glu Met Thr Lys Lys Gln Val Phe Ile Phe Asp Ser Leu Val Lys Lys 85 90 95

Cys Leu Phe Glu Val Leu Asn Thr Lys Asn Ile Phe Pro Gly Asp Val  $100 \hspace{1cm} 105 \hspace{1cm} 110$ 

Asn Trp Phe Val Gln His Glu Trp Gly Lys Asp Gln Gly Trp His Cys 115 120 125

His Val Leu Ile Gly Gly Lys Asp Phe Ser Gln Ala Gln Gly Lys Trp 130 140

Trp Arg Arg Gln Leu Asn Val Tyr Trp Ser Arg Trp Leu Val Thr Ala 145 150 155 160



Aia Giu ASP ASN Giu Trp Val Thr Leu Leu Thr Tyr Lys His Lys Gln 180 185 190 Thr Lys Lys Asp Tyr Thr Lys Cys Val Leu Phe Gly Asn Met Ile Ala 195 200 205 Tyr Tyr Phe Leu Thr Lys Lys Lys Ile Ser Thr Ser Pro Pro Arg Asp 210 220 Gly Gly Tyr Phe Leu Ser Ser Asp Ser Gly Trp Lys Thr Asn Phe Leu 230 235 240Lys Glu Gly Glu Arg His Leu Val Ser Lys Leu Tyr Thr Asp Asp Met 245 250 255 Arg Pro Glu Thr Val Glu Thr Thr Val Thr Thr Ala Gln Glu Thr Lys 260 270 Arg Gly Arg Ile Gln Thr Lys Lys Glu Val Ser Ile Lys Thr Thr Leu 275 280 285 Lys Glu Leu Val His Lys Arg Val Thr Ser Pro Glu Asp Trp Met Met  $290 \hspace{1cm} 295 \hspace{1cm} 300$ Met Gln Pro Asp Ser Tyr Ile Glu Met Met Ala Gln Pro Gly Gly Glu 305 310 315Asn Leu Leu Lys Asn Thr Leu Glu Ile Cys Thr Leu Thr Leu Ala Arg 325 330 335 Thr Lys Thr Ala Phe Asp Leu Ile Leu Glu Lys Ala Glu Thr Ser Lys  $340 \hspace{1cm} 345 \hspace{1cm} 350$ Leu Thr Asn Phe Ser Leu Pro Asp Thr Arg Thr Cys Arg Ile Phe Ala 355 360 365Phe His Gly Trp Asn Tyr Val Lys Val Cys His Ala Ile Cys Cys Val 370 380 Leu Asn Arg Gln Gly Gly Lys Arg Asn Ala Val Leu Phe His Gly Pro 385 400 Ala Ser Thr Gly Lys Ser Ile Ile Ala Gln Ala Ile Ala Gln Ala Val405 410 415Gly Asn Val Gly Cys Tyr Asn Ala Ala Asn Val Asn Phe Pro Phe Asn 420  $\,$  430  $\,$ Asp Cys Thr Asn Lys Asn Leu Ile Trp Val Glu Glu Ala Gly Asn Phe

435

440

445

Gly Gln Gln Val Asn Gln Phe Lys Ala Ile Cys Ser Gly Gln Thr Tle

Arg Ile Asp Gln Lys Gly Lys Gly Ser Lys Gln Ile Glu Pro Thr Pro 465 470 475 480

Val Ile Met Thr Thr Asn Glu Asn Ile Thr Val Val Arg Ile Gly Cys 485 490 495

Glu Glu Arg Pro Glu His Thr Gln Pro Ile Arg Asp Arg Met Leu Asn  $500 \hspace{1.5cm} 505 \hspace{1.5cm} 510$ 

Ile His Leu Thr His His Leu Pro Gly Asp Phe Gly Leu Val Asp Lys 515 520 525

Asn Glu Trp Pro Met Ile Cys Ala Trp Leu Val Lys Asn Gly Tyr Gln 530 540

Ser Thr Met Ala Ser Tyr Cys Ala Lys Trp Gly Lys Val Pro Asp Trp 545 550 560

Ser Glu Asn Trp Ala Glu Pro Lys Val Pro Thr Pro Ile Asn Leu Leu 565 570 575

Gly Ser Ala Arg Ser Pro Phe Thr Thr Pro Lys Ser Thr Pro Leu Ser  $580\,$ 

Gln Asn Tyr Ala Leu Thr Pro Leu Ala Ser Asp Leu Glu Asp Leu Ala 595

Leu Glu Pro Trp Ser Thr Pro Asn Thr Pro Val Ala Gly Thr Ala Glu 610 620

Thr Gln Asn Thr Gly Glu Ala Gly Ser Lys Ala Cys Gln Asp Gly Gln 625 630 635 640

Leu Ser Pro Thr Trp Ser Glu Ile Glu Glu Asp Leu Arg Ala Cys Phe 645 655

Gly Ala Glu Pro Leu Lys Lys Asp Phe Ser Glu Pro Leu Asn Leu Asp 660 665 670

<210> 15

<211> 60

<212> DNA

<213> Part of Parvovirus NS1 Variant

<400> 15

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<210> 16



<211> 2019 <212> DNA <213> Parvovirus NS1 Variant

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gatatcggat	ggaatagtta	caaaaaagag	ctgcaggagg	acgagctgaa	atctttacaa	180
cgaggagcgg	aaactacttg	ggaccaaagc	gaggacatgg	aatgggaaac	cacagtggat	240
gaaatgacca	aaaagcaagt	attcattttt	gattctttgg	ttaaaaaatg	tttatttgaa	300
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aaagaaggcg	agcgccatct	agtgagcaaa	ctatacactg	atgacatgcg	gccagaaacg	780
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1980 2019



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<210> 17 <211> 20

<212> PRT

<213> Part of Parvovirus NS1 Variant

<400> 17

Gly Gln Ala Ile Arg Ile Asp Gln Lys Gly Lys Gly Ser Lys Gln Ile 1 10 15

Glu Pro Thr Pro 20

<210> 18

<211> 672

<212> PRT

<213> Parvovirus NS1 Variant

<400> 18

Met Ala Gly Asn Ala Tyr Ser Asp Glu Val Leu Gly Ala Thr Asn Trp  $1 \hspace{1cm} 15$ 

Leu Lys Glu Lys Ser Asn Gln Glu Val Phe Ser Phe Val Phe Lys Asn 20 25 30

Glu Asn Val Gln Leu Asn Gly Lys Asp Ile Gly Trp Asn Ser Tyr Lys 35 40

Lys Glu Leu Gln Glu Asp Glu Leu Lys Ser Leu Gln Arg Gly Ala Glu 50 60

Thr Thr Trp Asp Gln Ser Glu Asp Met Glu Trp Glu Thr Thr Val Asp 65 70 75 80

Glu Met Thr Lys Lys Gln Val Phe Ile Phe Asp Ser Leu Val Lys Lys 85 90 95

Cys Leu Phe Glu Val Leu Asn Thr Lys Asn Ile Phe Pro Gly Asp Val  $100 ext{ } 105 ext{ } 110$ 

Asn Trp Phe Val Gln His Glu Trp Gly Lys Asp Gln Gly Trp His Cys 115 120 125

His Val Leu Ile Gly Gly Lys Asp Phe Ser Gln Ala Gln Gly Lys Trp 130 140

Trp Arg Arg Gln Leu Asn Val Tyr Trp Ser Arg Trp Leu Val Thr Ala 145 150 155 160

Cys Asn Val Gln Leu Thr Pro Ala Glu Arg Ile Lys Leu Arg Glu Ile 165 170 175 Ala Glu Asp Asn Glu Trp Val Thr Leu Leu Thr Tyr Lys His Lys Gln 180 185 190

Thr Lys Lys Asp Tyr Thr Lys Cys Val Leu Phe Gly Asn Met Ile Ala 195 200 205 Tyr Tyr Phe Leu Thr Lys Lys Lys Ile Ser Thr Ser Pro Pro Arg Asp 210 220 Gly Gly Tyr Phe Leu Ser Ser Asp Ser Gly Trp Lys Thr Asn Phe Leu 235 240 Lys Glu Gly Glu Arg His Leu Val Ser Lys Leu Tyr Thr Asp Asp Met 245 250 255Arg Pro Glu Thr Val Glu Thr Thr Val Thr Thr Ala Gln Glu Thr Lys 260 270 Arg Gly Arg Ile Gln Thr Lys Lys Glu Val Ser Ile Lys Thr Thr Leu 280 285 Lys Glu Leu Val His Lys Arg Val Thr Ser Pro Glu Asp Trp Met Met 290 295 300 Met Gln Pro Asp Ser Tyr Ile Glu Met Met Ala Gln Pro Gly Gly Glu 305 310 315 320 Asn Leu Leu Lys Asn Thr Leu Glu Ile Cys Thr Leu Thr Leu Ala Arg 325 330 335 Thr Lys Thr Ala Phe Asp Leu Ile Leu Glu Lys Ala Glu Thr Ser Lys 340 350 Leu Thr Asn Phe Ser Leu Pro Asp Thr Arg Thr Cys Arg Ile Phe Ala 355 360 365Phe His Gly Trp Asn Tyr Val Lys Val Cys His Ala Ile Cys Cys Val 370 380 Leu Asn Arg Gln Gly Gly Lys Arg Asn Thr Val Leu Phe His Gly Pro 385 400 Ala Ser Thr Gly Lys Ser Ile Ile Ala Gln Ala Ile Ala Gln Ala Val 405 410 415 Gly Asn Val Gly Cys Tyr Asn Ala Ala Asn Val Asn Phe Pro Phe Asn 420 430 Asp Cys Thr Asn Lys Asn Leu Ile Trp Val Glu Glu Ala Gly Asn Phe 435 440

Gly Gln Gln Val Asn Gln Phe Lys Ala Ile Cys Ser Gly Gln Ala Ile 450 460

Arg Ile Asp Gln Lys Gly Lys Gly Ser Lys Gln Ile Glu Pro Thr Pro 465 470 475 480

Val Ile Met Thr Thr Asn Glu Asn Ile Thr Val Val Arg Ile Gly Cys  $485 \hspace{1cm} 490 \hspace{1cm} 495$ 

Glu Glu Arg Pro Glu His Thr Gln Pro Ile Arg Asp Arg Met Leu Asn 500 510

Ile His Leu Thr His His Leu Pro Gly Asp Phe Gly Leu Val Asp Lys 515 520 525

Asn Glu Trp Pro Met Ile Cys Ala Trp Leu Val Lys Asn Gly Tyr Gln 530 540

Ser Thr Met Ala Ser Tyr Cys Ala Lys Trp Gly Lys Val Pro Asp Trp 545 550 560

Ser Glu Asn Trp Ala Glu Pro Lys Val Pro Thr Pro Ile Asn Leu Leu 565 570 575

Gly Ser Ala Arg Ser Pro Phe Thr Thr Pro Lys Ser Thr Pro Leu Ser 580 585 590

Gln Asn Tyr Ala Leu Thr Pro Leu Ala Ser Asp Leu Glu Asp Leu Ala 595 600 605

Leu Glu Pro Trp Ser Thr Pro Asn Thr Pro Val Ala Gly Thr Ala Glu 615 620

Thr Gln Asn Thr Gly Glu Ala Gly Ser Lys Ala Cys Gln Asp Gly Gln 625 630 640

Leu Ser Pro Thr Trp Ser Glu Ile Glu Glu Asp Leu Arg Ala Cys Phe 645 650 655

Gly Ala Glu Pro Leu Lys Lys Asp Phe Ser Glu Pro Leu Asn Leu Asp 660 665 670